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<120> Human Antibody Molecules for IL-13

<130> 43518-0001 PC US

<140> US 10/564,647
<141> 2006-07-19

<150> PCT/GB2004/003059

<151> 2004-07-15

<150> US 60/487,512

<151> 2003-07-15

<150> US 60/558,216

<151> 2004-03-31

<150> GB 0407315.1

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<150> US 60/573,791

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Asn Tyr Gly Leu Ser
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<213> Homo sapiens

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Trp Ile Ser Ala Asn Asn Gly Asp Thr Asn Tyr Gly Gln Glu Phe Gln Gly
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<213> Homo sapiens

<400> 3

Asp Ser Ser Ser Asn Trp Ala Arg Trp Phe Phe Asp Leu
1 5 10

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<211> 11

<212> PRT

<213> Homo sapiens

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Gly Gly Asn Asn Ile Gly Ser Lys Leu Val His

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<213> Homo sapiens

<400> 5

Asp Asp Gly Asp Arg Pro Ser
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<213> Homo sapiens

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Gln Val Trp Asp Thr Gly Ser Asp Pro Val Val
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<213> Homo sapiens

<400> 7

Asn Tyr Gly Leu Ser
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<213> Homo sapiens

<400> 8

Trp Ile Ser Ala Asn Asn Gly Asp Thr Asn Tyr Gly Gln Glu Phe Gln Gly
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<213> Homo sapiens

<400> 9

Asp Ser Ser Ser Ser Trp Ala Arg Trp Phe Phe Asp Leu
1 5 10

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<211> 11

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<213> Homo sapiens

<400> 10

Gly Gly Asn Ile Ile Gly Ser Lys Leu Val His
1 5 10

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<400> 11

Asp Asp Gly Asp Arg Pro Ser
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Gln Val Trp Asp Thr Gly Ser Asp Pro Val Val
1 5 10

<210> 13

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<213> Homo sapiens

<400> 13

Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Arg Asn Tyr
20 25 30

Gly Leu Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Trp Ile Ser Ala Asn Asn Gly Asp Thr Asn Tyr Gly Gln Glu Phe
50 55 60

Gln Gly Arg Ile Thr Met Thr Thr Glu Thr Ser Thr Asn Thr Ala His
65 70 75 80

Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Val Arg Asp Ser Ser Ser Asn Trp Ala Arg Trp Phe Phe Asp Leu Trp
100 105 110

Gly Lys Gly Thr Met Val Thr Val Ser Ser
115 120

<210> 14

<211> 108

<212> PRT

<213> Homo sapiens

<400> 14

Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Gln
1 5 10 15

Thr Ala Arg Ile Pro Cys Gly Gly Asn Asn Ile Gly Ser Lys Leu Val
20 25 30

His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Val Tyr
35 40 45

Asp Asp Gly Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Ile Asp Ala Gly
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Thr Gly Ser Asp Pro
85 90 95

Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

<210> 15

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<212> PRT

<213> Homo sapiens

<400> 15

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30

Gly Leu Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Trp Ile Ser Ala Asn Asn Gly Asp Thr Asn Tyr Gly Gln Glu Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65 70 75 80

Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Asp Ser Ser Ser Ser Trp Ala Arg Trp Phe Phe Asp Leu Trp

100 105 110

Gly Arg Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 16

<211> 108

<212> PRT

<213> Homo sapiens

<400> 16

Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys
1 5 10 15

Thr Ala Arg Ile Thr Cys Gly Gly Asn Ile Ile Gly Ser Lys Leu Val
20 25 30

His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr
35 40 45

Asp Asp Gly Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Thr Gly Ser Asp Pro
85 90 95

Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

<210> 17

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<212> PRT

<213> Homo sapiens

<400> 17

Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Arg
20 25 30

<210> 18

<211> 14

<212> PRT

<213> Homo sapiens

<400> 18

Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met Gly
1 5 10

<210> 19

<211> 32

<212> PRT

<213> Homo sapiens

<400> 19

Arg Ile Thr Met Thr Thr Glu Thr Ser Thr Asn Thr Ala His Met Glu
1 5 10 15

Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Val Arg
20 25 30

<210> 20

<211> 22

<212> PRT

<213> Homo sapiens

<400> 20

Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Gln
1 5 10 15

Thr Ala Arg Ile Pro Cys
20

<210> 21

<211> 15

<212> PRT

<213> Homo sapiens

<400> 21

Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Val Tyr
1 5 10 15

<210> 22

<211> 32

<212> PRT

<213> Homo sapiens

<400> 22

Gly Ile Pro Glu Arg Phe Ser Gly Ser Asn Ser Gly Asn Thr Ala Thr
1 5 10 15

Leu Thr Ile Ser Arg Ile Asp Ala Gly Asp Glu Ala Asp Tyr Tyr Cys
20 25 30

<210> 23

<211> 120

<212> PRT

<213> Homo sapiens

<400> 23

Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
20 25 30

Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ser Ala Ile Ser Gly Ser Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

```
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Ala Arg Val Gly Ala Ala Gly Glu Gly Tyr Tyr Gly Tyr Trp Gly Arg
            100                 105                 110

Gly Thr Leu Val Thr Val Ser Ser
        115                 120
```

<210> 24

<211> 110

<212> PRT

<213> Homo sapiens

<400> 24

```
Asn Phe Met Leu Thr Gln Pro His Ser Val Ser Glu Ser Pro Gly Lys
1               5                   10                  15

Thr Val Thr Ile Ser Cys Thr Arg Ser Ser Gly Ser Ile Ala Ser Asn
            20                  25                  30

Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ala Pro Thr Thr Val
        35                  40                  45

Ile Tyr Asp Asp Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
    50                  55                  60

Gly Ser Ile Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly
65                  70                  75                  80

Leu Lys Thr Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser
                85                  90                  95

Asn Asn Asp Val Phe Gly Gly Gly Thr Lys Val Thr Val Leu
            100                 105                 110
```

<210> 25

<211> 123

<212> PRT

<213> Homo sapiens

<400> 25

```
Gln Val Gln Leu Gln Glu Ser Gly Gly Gly Gly Leu Val Gln Pro Gly
1               5                  10                  15

Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser
            20                  25                  30

Tyr Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
        35                  40                  45

Val Ser Ser Ile Ser Ala Ser Gly Asp Ser Thr Phe Tyr Ala Asp Ser
    50                  55                  60

Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Asn Lys Asn Met Val
65                  70                  75                  80

Phe Leu Gln Val Asn Ser Leu Arg Ala Asp Asp Thr Ala Val Tyr Phe
                85                  90                  95

Cys Ala Lys Asp Trp Ser Gln Trp Leu Val Gly Asp Ala Phe Asp Val
            100                 105                 110

Trp Gly Arg Gly Thr Thr Val Thr Val Ser Ser
        115                 120
```

<210> 26

<211> 108

<212> PRT

<213> Homo sapiens

<400> 26

```
Asp Ile Gln Leu Thr Gln Ser Pro Ser Thr Leu Ser Ala Ser Val Gly
1               5                  10                  15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Val Ser Leu Trp
            20                  25                  30

Val Ala Trp Tyr Gln Gln Arg Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35                  40                  45

Tyr Asp Gly Ser Thr Leu Gln Ser Gly Val Pro Ala Arg Phe Ser Gly
    50                  55                  60
```

```
Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80

Asp Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Lys Thr Phe Ser Thr
                85                  90                  95

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Ala
            100                 105
```

<210> 27

<211> 30

<212> PRT

<213> Homo sapiens

<400> 27

```
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1               5                   10                  15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr
            20                  25                  30
```

<210> 28

<211> 14

<212> PRT

<213> Homo sapiens

<400> 28

```
Trp Tyr Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met Gly
1               5                   10
```

<210> 29

<211> 32

<212> PRT

<213> Homo sapiens

<400> 29

```
Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr Met Glu
1               5                   10                  15
```

```
Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
            20                  25                  30
```

<210> 30

<211> 22

<212> PRT

<213> Homo sapiens

<400> 30

```
Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys
1               5                   10                  15

Thr Ala Arg Ile Thr Cys
            20
```

<210> 31

<211> 15

<212> PRT

<213> Homo sapiens

<400> 31

```
Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr
1               5                   10                  15
```

<210> 32

<211> 32

<212> PRT

<213> Homo sapiens

<400> 32

```
Gly Ile Pro Glu Arg Phe Ser Gly Ser Asn Ser Gly Asn Thr Ala Thr
1               5                   10                  15

Leu Thr Ile Ser Arg Val Glu Ala Gly Asp Glu Ala Asp Tyr Tyr Cys
            20                  25                  30
```

<210> 33

<211> 122

<212> PRT

<213> Homo sapiens

<400> 33

Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
20 25 30

Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ser Ala Ile Ser Gly Ser Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Val Gly Lys Ala Thr Thr Glu Glu Gly Tyr Tyr Gly Tyr Trp
100 105 110

Gly Arg Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 34

<211> 110

<212> PRT

<213> Homo sapiens

<400> 34

Asn Phe Met Leu Thr Gln Pro His Ser Val Ser Glu Ser Pro Gly Lys
1 5 10 15

Thr Val Thr Ile Ser Cys Thr Arg Ser Ser Gly Ser Ile Ala Ser Asn
20 25 30

Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ala Pro Thr Thr Val

35 40 45

Ile Tyr Asp Asp Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
50 55 60

Gly Ser Ile Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly
65 70 75 80

Leu Lys Thr Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser
85 90 95

Asn Asn Asp Val Phe Gly Gly Gly Thr Lys Val Thr Val Leu
100 105 110

<210> 35

<211> 122

<212> PRT

<213> Homo sapiens

<400> 35

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Glu Gln Thr
20 25 30

Gly Val Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Trp Ile Ser Ala Asn Asn Gly Asp Thr Asn Tyr Gly Gln Glu Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65 70 75 80

Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Asp Ser Ser Ser Ser Trp Ala Arg Trp Phe Phe Asp Leu Trp
100 105 110

Gly Arg Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 36

<211> 108

<212> PRT

<213> Homo sapiens

<400> 36

```
Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys
1               5                   10                  15

Thr Ala Arg Ile Thr Cys Gly Gly Asn Ile Ile Gly Ser Lys Leu Val
            20                  25                  30

His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr
        35                  40                  45

Asp Asp Gly Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
    50                  55                  60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly
65                  70                  75                  80

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Thr Gly Ser Asp Pro
                85                  90                  95

Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105
```

<210> 37

<211> 122

<212> PRT

<213> Homo sapiens

<400> 37

```
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1               5                   10                  15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
            20                  25                  30

Gly Leu Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35                  40                  45
```

Gly Trp Ile Asn Tyr Asp Gly Gly Asn Thr Gln Tyr Gly Gln Glu Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65 70 75 80

Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Asp Ser Ser Ser Ser Trp Ala Arg Trp Phe Phe Asp Leu Trp
100 105 110

Gly Arg Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 38

<211> 108

<212> PRT

<213> Homo sapiens

<400> 38

Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys
1 5 10 15

Thr Ala Arg Ile Thr Cys Gly Gly Asn Ile Ile Gly Ser Lys Leu Val
20 25 30

His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr
35 40 45

Asp Asp Gly Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Thr Gly Ser Asp Pro
85 90 95

Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

<210> 39

<211> 122

<212> PRT

<213> Homo sapiens

<400> 39

```
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1               5                   10                  15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
            20                  25                  30

Gly Leu Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35                  40                  45

Gly Trp Ile Ser Gly Leu Asn Gly Glu Thr Leu Tyr Gly Gln Glu Phe
    50                  55                  60

Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65                  70                  75                  80

Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Ala Arg Asp Ser Ser Ser Ser Trp Ala Arg Trp Phe Phe Asp Leu Trp
            100                 105                 110

Gly Arg Gly Thr Leu Val Thr Val Ser Ser
        115                 120
```

<210> 40

<211> 108

<212> PRT

<213> Homo sapiens

<400> 40

```
Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys
1               5                   10                  15

Thr Ala Arg Ile Thr Cys Gly Gly Asn Ile Ile Gly Ser Lys Leu Val
            20                  25                  30

His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr
```

35 40 45

Asp Asp Gly Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Thr Gly Ser Asp Pro
85 90 95

Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

<210> 41

<211> 122

<212> PRT

<213> Homo sapiens

<400> 41

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30

Gly Leu Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Trp Ile Ala Thr Pro Asp Gly Gln Thr Ser Tyr Gly Gln Glu Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65 70 75 80

Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Asp Ser Asn Ser Ser Trp Ala Arg Trp Phe Phe Asp Leu Trp
100 105 110

Gly Arg Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 42

<211> 108

<212> PRT

<213> Homo sapiens

<400> 42

```
Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys
1               5                  10                  15

Thr Ala Arg Ile Thr Cys Gly Gly Asn Ile Ile Gly Ser Lys Leu Val
            20                  25                  30

His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr
        35                  40                  45

Asp Asp Gly Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
    50                  55                  60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly
65                  70                  75                  80

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Thr Gly Ser Asp Pro
                85                  90                  95

Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105
```

<210> 43

<211> 122

<212> PRT

<213> Homo sapiens

<400> 43

```
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1               5                  10                  15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Ile Asp Thr
            20                  25                  30

Gly Val Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35                  40                  45
```

Gly Trp Ile Ser Ala Asn Asn Gly Asp Thr Asn Tyr Gly Gln Glu Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65 70 75 80

Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Asp Ser Ser Ser Ser Trp Ala Arg Trp Phe Phe Asp Leu Trp
100 105 110

Gly Arg Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 44

<211> 108

<212> PRT

<213> Homo sapiens

<400> 44

Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys
1 5 10 15

Thr Ala Arg Ile Thr Cys Gly Gly Asn Ile Ile Gly Ser Lys Leu Val
20 25 30

His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr
35 40 45

Asp Asp Gly Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Thr Gly Ser Asp Pro
85 90 95

Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

<210> 45

<211> 122

<212> PRT

<213> Homo sapiens

<400> 45

```
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1               5                   10                  15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
            20                  25                  30

Gly Leu Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35                  40                  45

Gly Trp Ile Ser Gly Ser Asn Gly Tyr Thr Ser Tyr Gly Gln Glu Phe
    50                  55                  60

Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65                  70                  75                  80

Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Ala Arg Asp Ser Ser Ser Ser Trp Ala Arg Trp Phe Phe Asp Leu Trp
            100                 105                 110

Gly Arg Gly Thr Leu Val Thr Val Ser Ser
        115                 120
```

<210> 46

<211> 108

<212> PRT

<213> Homo sapiens

<400> 46

```
Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys
1               5                   10                  15

Thr Ala Arg Ile Thr Cys Gly Gly Asn Ile Ile Gly Ser Lys Leu Val
            20                  25                  30

His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr
```

35 40 45

Asp Asp Gly Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Thr Gly Ser Asp Pro
85 90 95

Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

<210> 47

<211> 122

<212> PRT

<213> Homo sapiens

<400> 47

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30

Gly Leu Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Trp Ile Asn Asp Ala Thr Gly Asp Thr Gln Tyr Gly Gln Glu Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65 70 75 80

Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Asp Ser Ser Ser Ser Trp Ala Arg Trp Phe Phe Asp Leu Trp
100 105 110

Gly Arg Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 48

<211> 108

<212> PRT

<213> Homo sapiens

<400> 48

Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys
1 5 10 15

Thr Ala Arg Ile Thr Cys Gly Gly Asn Ile Ile Gly Ser Lys Leu Val
20 25 30

His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr
35 40 45

Asp Asp Gly Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Thr Gly Ser Asp Pro
85 90 95

Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

<210> 49

<211> 122

<212> PRT

<213> Homo sapiens

<400> 49

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr
20 25 30

Gly Leu Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

```
Gly Trp Ile Arg Asn Ile Asp Gly Tyr Thr Ile Tyr Gly Gln Glu Phe
    50                  55                  60

Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65                  70                  75                  80

Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Ala Arg Asp Ser Ser Ser Ser Trp Ala Arg Trp Phe Phe Asp Leu Trp
            100                 105                 110

Gly Arg Gly Thr Leu Val Thr Val Ser Ser
        115                 120
```

<210> 50

<211> 108

<212> PRT

<213> Homo sapiens

<400> 50

```
Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys
1               5                   10                  15

Thr Ala Arg Ile Thr Cys Gly Gly Asn Ile Ile Gly Ser Lys Leu Val
            20                  25                  30

His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr
        35                  40                  45

Asp Asp Gly Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
    50                  55                  60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly
65                  70                  75                  80

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Thr Gly Ser Asp Pro
                85                  90                  95

Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105
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<210> 51

<211> 122

<212> PRT

<213> Homo sapiens

<400> 51

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Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
            20                  25                  30

Gly Leu Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35                  40                  45

Gly Trp Ile Asp Asp Asp Ser Gly Thr Thr Ile Tyr Gly Gln Glu Phe
    50                  55                  60

Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65                  70                  75                  80

Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Ala Arg Asp Ser Ser Ser Ser Trp Ala Arg Trp Phe Phe Asp Leu Trp
            100                 105                 110

Gly Arg Gly Thr Leu Val Thr Val Ser Ser
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<210> 52

<211> 108

<212> PRT

<213> Homo sapiens

<400> 52

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Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys
1               5                   10                  15

Thr Ala Arg Ile Thr Cys Gly Gly Asn Ile Ile Gly Ser Lys Leu Val
            20                  25                  30

His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr
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35 40 45

Asp Asp Gly Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Thr Gly Ser Asp Pro
85 90 95

Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

<210> 53

<211> 122

<212> PRT

<213> Homo sapiens

<400> 53

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Ala Asn Thr
20 25 30

Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Trp Ile Ser Ala Asn Asn Gly Asp Thr Asn Tyr Gly Gln Glu Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65 70 75 80

Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Asp Ser Ser Ser Ser Trp Ala Arg Trp Phe Phe Asp Leu Trp
100 105 110

Gly Arg Gly Thr Leu Val Thr Val Ser Ser
115 120

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<211> 108

<212> PRT

<213> Homo sapiens

<400> 54

Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys
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Thr Ala Arg Ile Thr Cys Gly Gly Asn Ile Ile Gly Ser Lys Leu Val
20 25 30

His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr
35 40 45

Asp Asp Gly Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Thr Gly Ser Asp Pro
85 90 95

Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

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<211> 5

<212> PRT

<213> Homo sapiens

<400> 55

Ser Tyr Ala Met Ser
1 5

<210> 56

<211> 17

<212> PRT

<213> Homo sapiens

<400> 56

Ala Ile Ser Gly Ser Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val Lys
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Gly

<210> 57

<211> 11

<212> PRT

<213> Homo sapiens

<400> 57

Val Gly Ala Ala Gly Glu Gly Tyr Tyr Gly Tyr
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<210> 58

<211> 13

<212> PRT

<213> Homo sapiens

<400> 58

Thr Arg Ser Ser Gly Ser Ile Ala Ser Asn Tyr Val Gln
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<210> 59

<211> 7

<212> PRT

<213> Homo sapiens

<400> 59

Asp Asp Asn Gln Arg Pro Ser
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<210> 60

<211> 9

<212> PRT

<213> Homo sapiens

<400> 60

Gln Ser Tyr Asp Ser Asn Asn Asp Val
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<400> 61

Gln Thr Gly Val Ser
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<210> 62

<211> 17

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<213> Homo sapiens

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Trp Ile Ser Ala Asn Asn Gly Asp Thr Asn Tyr Gly Gln Glu Phe Gln Gly
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<210> 63

<211> 13

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<400> 63

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<210> 64

<211> 11

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<213> Homo sapiens

<400> 64

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Asp Asp Gly Asp Arg Pro Ser
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<210> 66

<211> 11

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<400> 66

Gln Val Trp Asp Thr Gly Ser Asp Pro Val Val
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<213> Homo sapiens

<400> 67

Asn Thr Gly Ile Ser
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<210> 68

<211> 17

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<213> Homo sapiens

<400> 68

Trp Ile Ser Ala Asn Asn Gly Asp Thr Asn Tyr Gly Gln Glu Phe Gln Gly
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<211> 13

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<400> 69

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<211> 11

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<213> Homo sapiens

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<211> 7

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<400> 71

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<210> 72

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<400> 72

Gln Val Trp Asp Thr Gly Ser Asp Pro Val Val
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Asn Tyr Gly Leu Ser
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<210> 74

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<211> 11

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<213> Homo sapiens

<400> 76

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Asp Asp Gly Asp Arg Pro Ser
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<210> 78

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Asn Tyr Gly Leu Ser

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<210> 82

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<400> 82

Gly Gly Asn Ile Ile Gly Ser Lys Leu Val His
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<211> 7

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<400> 83

Asp Asp Gly Asp Arg Pro Ser

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<210> 84

<211> 11

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Asp Thr Gly Val Ser
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<213> Homo sapiens

<400> 88

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<211> 7

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<400> 89

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<210> 90

<211> 11

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<400> 90

Gln Val Trp Asp Thr Gly Ser Asp Pro Val Val
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<400> 91

Asn Tyr Gly Leu Ser
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<210> 92

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<210> 96

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Asp Tyr Gly Leu Ser
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<213> Homo sapiens

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<210> 108

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<400> 108

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1 5 10

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<212> DNA

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cctggacaag ggcttgagtg gatgggatgg atcagcgcta ataatggcga cacaaattat 180

ggacaggaat tccagggcag agtcaccatg accacagata catccacgag cacagcctac 240

atggagttga ggagcctgag atctgacgac acggccgttt attactgtgc gagagactcc 300

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caggcccctg tgctggtcat ctatgatgat ggcgaccggc cctcagggat ccctgagcga 180
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gatgaggccg actattattg tcaggtgtgg gatactggta gtgatcccgt ggtattcggc 300
ggagggacca agctgaccgt cctaggt 327

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<211> 366
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cctggacaag ggcttgagtg gatgggatgg atctccggct tgaacggcga gacattgtat 180

ggacaggaat tccagggcag agtcaccatg accacagata catccacgag cacagcctac 240

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cctggacaag ggcttgagtg gatgggatgg atcagcggga gcaacggcta cacatcttat 180

ggacaggaat tccagggcag agtcaccatg accacagata cgtccacgag cacagcctac 240

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tcctca 366

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cctggacaag ggcttgagtg gatgggatgg atcaacgacg ccaccggcga cacacagtat 180

ggacaggaat tccagggcag agtcaccatg accacagata catccacgag cacagcctac 240

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caggcccctg tgctggtcat ctatgatgat ggcgaccggc cctcagggat ccctgagcga 180

ttctctggct ccaactctgg gaacacggcc accctgacca tcagcagggt cgaggccggg 240

gatgaggccg actattattg tcaggtgtgg gatactggta gtgatcccgt ggtattcggc 300

ggagggacca agctgaccgt cctaggt 327

<210> 127

<211> 366

<212> DNA

<213> Homo sapiens

<400> 127

caggtgcagc tggtgcagtc tggggctgag gtgaagaagc ctggggcctc agtgaaggtc 60

tcctgcaagg cttctggtta cacctttaca gattatggtc tcagctgggt gcgacaggcc 120

cctggacaag ggctagagtg gatgggatgg atccgcaaca tcgacggcta cacaatttat 180

ggacaggaat tccagggcag agtcaccatg accacagata catccacgag cacagcctac 240

atggagttga ggagcctgag atctgacgac acggccgttt attactgtgc gagagactcc 300

agcagcagct gggcccgctg gtttttcgat ctctggggcc gggggacact ggtcaccgtc 360

tcctca 366

<210> 128

<211> 327

<212> DNA

<213> Homo sapiens

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caggcccctg tgctggtcat ctatgatgat ggcgaccggc cctcagggat ccctgagcga 180

ttctctggct ccaactctgg gaacacggcc accctgacca tcagcagggt cgaggccggg 240

gatgaggccg actattattg tcaggtgtgg gatactggta gtgatcccgt ggtattcggc 300

ggagggacca agctgaccgt cctaggt 327

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<400> 129
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tcctgcaagg cttctggtta cacctttaca aattatggtc tcagctgggt gcgacaggcc 120

cctggacaag ggcttgagtg gatgggatgg atcgacgacg acagcggcac gacaatatat 180

ggacaggaat tccagggcag agtcaccatg accacagata catccacgag cacagcctac 240

atggagttga ggagcctgag atctgacgac acggccgttt attactgtgc gagagactcc 300

agcagcagct gggcccgctg gtttttcgat ctctggggcc gggggacact ggtcaccgtc 360

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<211> 327

<212> DNA

<213> Homo sapiens

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caggcccctg tgctggtcat ctatgatgat ggcgaccggc cctcagggat ccctgagcga 180

ttctctggct ccaactctgg gaacacggcc accctgacca tcagcagggt cgaggccggg 240

gatgaggccg actattattg tcaggtgtgg gatactggta gtgatcccgt ggtattcggc 300

ggagggacca agctgaccgt cctaggt 327

<210> 131

<211> 366

<212> DNA

<213> Homo sapiens

<400> 131

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tcctgcaagg cttctggtta cacctttgcg aacaccggga tctcgtgggt gcgacaggcc 120

cctggacaag ggcttgagtg gatgggatgg atcagcgcta ataatggcga cacaaattat 180

ggacaggaat tccagggcag agtcaccatg accacagata catccacgag cacagcctac 240

atggagttga ggagcctgag atctgacgac acggccgttt attactgtgc gagagactcc 300

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tcctca 366

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<212> DNA

<213> Homo sapiens

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caggcccctg tgctggtcat ctatgatgat ggcgaccggc cctcagggat ccctgagcga 180

ttctctggct ccaactctgg gaacacggcc accctgacca tcagcagggt cgaggccggg 240

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ggagggacca agctgaccgt cctaggt 327

<210> 133

<211> 122

<212> PRT

<213> Homo sapiens

<400> 133

Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30

Gly Leu Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Trp Ile Ser Ala Asn Asn Gly Glu Thr Asn Tyr Gly Gln Glu Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Thr Glu Thr Pro Thr Asn Thr Ala His
65 70 75 80

Met Glu Leu Arg Ser Leu Thr Ser Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Val Arg Asp Ser Ser Ser Asn Trp Ala Arg Trp Tyr Phe Asp Leu Trp
100 105 110

Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 134

<211> 109

<212> PRT

<213> Homo sapiens

<400> 134

Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Gln
1 5 10 15

Thr Ala Arg Ile Pro Cys Gly Gly Asn Asn Ile Gly Ser Lys Leu Val
20 25 30

His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Val Tyr
35 40 45

Asp Asp Gly Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Ile Asp Ala Gly
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Thr Gly Ser Asp Pro
85 90 95

Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly.
100 105

<210> 135

<211> 5

<212> PRT

<213> Homo sapiens

<400> 135

Asn Tyr Gly Leu Ser
1 5

<210> 136

<211> 17

<212> PRT

<213> Homo sapiens

<400> 136

Trp Ile Ser Ala Asn Asn Gly Glu Thr Asn Tyr Gly Gln Glu Phe Gln
1 5 10 15

Gly

<210> 137

<211> 13

<212> PRT

<213> Homo sapiens

<400> 137

Asp Ser Ser Ser Asn Trp Ala Arg Trp Tyr Phe Asp Leu
1 5 10

<210> 138

<211> 11

<212> PRT

<213> Homo sapiens

<400> 138

Gly Gly Asn Asn Ile Gly Ser Lys Leu Val His
1 5 10

<210> 139

<211> 7

<212> PRT

<213> Homo sapiens

<400> 139

Asp Asp Gly Asp Arg Pro Ser
1 5

<210> 140

<211> 11

<212> PRT

<213> Homo sapiens

<400> 140

Gln Val Trp Asp Thr Gly Ser Asp Pro Val Val
1 5 10

<210> 141

<211> 5

<212> PRT

<213> Homo sapiens

<400> 141

Ser Tyr Ala Met Ser
1 5

<210> 142

<211> 17

<212> PRT

<213> Homo sapiens

<400> 142

Ala Ile Ser Gly Ser Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 143

<211> 11

<212> PRT

<213> Homo sapiens

<400> 143

Val Gly Ala Ala Gly Glu Gly Tyr Tyr Gly Tyr
1 5 10

<210> 144

<211> 13

<212> PRT

<213> Homo sapiens

<400> 144

Thr Arg Ser Ser Gly Ser Ile Ala Ser Asn Tyr Val Glu
1 5 10

<210> 145

<211> 7

<212> PRT

<213> Homo sapiens

<400> 145

Asp Asp Asn Gln Arg Pro Ser
1 5

<210> 146

<211> 9

<212> PRT

<213> Homo sapiens

<400> 146

Gln Ser Tyr Asp Ser Asn Asn Asp Val
1 5

<210> 147

<211> 5

<212> PRT

<213> Homo sapiens

<400> 147

Ser Tyr Ala Met Ser
1 5

<210> 148

<211> 17

<212> PRT

<213> Homo sapiens

<400> 148

Ala Ile Ser Gly Ser Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 149

<211> 13

<212> PRT

<213> Homo sapiens

<400> 149

Val Gly Arg Ala Thr Thr Asp Glu Gly Tyr Tyr Gly Tyr
1 5 10

<210> 150

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<212> PRT

<213> Homo sapiens

<400> 150

Thr Arg Ser Ser Gly Ser Ile Ala Ser Asn Tyr Val Gln
1 5 10

<210> 151

<211> 7

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<213> Homo sapiens

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Asp Asp Asn Gln Arg Pro Ser
1 5

<210> 152

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<213> Homo sapiens

<400> 152

Gln Ser Tyr Asp Ser Asn Asn Asp Val
1 5

<210> 153

<211> 5

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<213> Homo sapiens

<400> 153

Ser Tyr Ala Met Ser
1 5

<210> 154

<211> 17

<212> PRT

<213> Homo sapiens

<400> 154

Ala Ile Ser Gly Ser Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 155

<211> 11

<212> PRT

<213> Homo sapiens

<400> 155

Val Gly Lys Ala Thr Thr Glu Glu Gly Tyr Tyr
1 5 10

<210> 156

<211> 13

<212> PRT

<213> Homo sapiens

<400> 156

Thr Arg Ser Ser Gly Ser Ile Ala Ser Asn Tyr Val Gln
1 5 10

<210> 157

<211> 7

<212> PRT

<213> Homo sapiens

<400> 157

Asp Asp Asn Gln Arg Pro Ser
1 5

<210> 158

<211> 9

<212> PRT

<213> Homo sapiens

<400> 158

Gln Ser Tyr Asp Ser Asn Asn Asp Val
1 5

<210> 159

<211> 15

<212> DNA

<213> Homo sapiens

<400> 159
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<210> 160

<211> 51

<212> DNA

<213> Homo sapiens

<400> 160

tggatcagcg ctaataatgg cgacacaaat tatggacagg aattccaggg c 51

<210> 161

<211> 39

<212> DNA

<213> Homo sapiens

<400> 161
gactccagca gcaactgggc ccgctggttt ttcgatctc 39

<210> 162

<211> 33

<212> DNA

<213> Homo sapiens

<400> 162
gggggaaaca acattggaag taaacttgta cac 33

<210> 163

<211> 21

<212> DNA

<213> Homo sapiens

<400> 163
gatgatggcg accggccctc a 21

<210> 164

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<400> 164
caggtgtggg atactggtag tgatcccgtg gta 33

<210> 165

<211> 15

<212> DNA

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<400> 165
aattatggtc tcagc 15

<210> 166

<211> 51

<212> DNA

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<400> 166
tggatcagcg ctaataatgg cgacacaaat tatggacagg aattccaggg c 51

<210> 167

<211> 39

<212> DNA

<213> Homo sapiens

<400> 167
gactccagca gcagctgggc ccgctggttt ttcgatctc 39

<210> 168

<211> 33

<212> DNA

<213> Homo sapiens

<400> 168
gggggaaaca tcattggaag taaacttgta cac 33

<210> 169

<211> 21

<212> DNA

<213> Homo sapiens

<400> 169

gatgatggcg accggccctc a 21

<210> 170

<211> 33

<212> DNA

<213> Homo sapiens

<400> 170
caggtgtggg atactggtag tgatcccgtg gta 33

<210> 171

<211> 327

<212> PRT

<213> Homo sapiens

<400> 171

Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg
1 5 10 15

Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
20 25 30

Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
35 40 45

Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
50 55 60

Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Lys Thr
65 70 75 80

Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys
85 90 95

Arg Val Glu Ser Lys Tyr Gly Pro Pro Cys Pro Ser Cys Pro Ala Pro
100 105 110

Glu Phe Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys
115 120 125

Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val
130 135 140

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Asp Val Ser Gln Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp
145                 150                 155                 160

Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe
                165                 170                 175

Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp
            180                 185                 190

Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu
        195                 200                 205

Pro Ser Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg
    210                 215                 220

Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Gln Glu Glu Met Thr Lys
225                 230                 235                 240

Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp
                245                 250                 255

Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys
            260                 265                 270

Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser
        275                 280                 285

Arg Leu Thr Val Asp Lys Ser Arg Trp Gln Glu Gly Asn Val Phe Ser
    290                 295                 300

Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser
305                 310                 315                 320

Leu Ser Leu Ser Leu Gly Lys
                325
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<210> 172

<211> 105

<212> PRT

<213> Homo sapiens

<400> 172

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Gln Pro Lys Ala Ala Pro Ser Val Thr Leu Phe Pro Pro Ser Ser Glu
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1 5 10 15

Glu Leu Gln Ala Asn Lys Ala Thr Leu Val Cys Leu Ile Ser Asp Phe
20 25 30

Tyr Pro Gly Ala Val Thr Val Ala Trp Lys Ala Asp Ser Ser Pro Val
35 40 45

Lys Ala Gly Val Glu Thr Thr Thr Pro Ser Lys Gln Ser Asn Asn Lys
50 55 60

Tyr Ala Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp Lys Ser
65 70 75 80

His Arg Ser Tyr Ser Cys Gln Val Thr His Glu Gly Ser Thr Val Glu
85 90 95

Lys Thr Val Ala Pro Thr Glu Cys Ser
100 105

<210> 173

<211> 132

<212> PRT

<213> Homo sapiens

<400> 173

Met Ala Leu Leu Leu Thr Thr Val Ile Ala Leu Thr Cys Leu Gly Gly
1 5 10 15

Phe Ala Ser Pro Gly Pro Val Pro Pro Ser Thr Ala Leu Arg Glu Leu
20 25 30

Ile Glu Glu Leu Val Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys
35 40 45

Asn Gly Ser Met Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr Cys
50 55 60

Ala Ala Leu Glu Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile Glu
65 70 75 80

Lys Thr Gln Arg Met Leu Ser Gly Phe Cys Pro His Lys Val Ser Ala
85 90 95

Gly Gln Phe Ser Ser Leu His Val Arg Asp Thr Lys Ile Glu Val Ala
100 105 110

Gln Phe Val Lys Asp Leu Leu Leu His Leu Lys Lys Leu Phe Arg Glu
115 120 125

Gly Arg Phe Asn
130

<210> 174

<211> 132

<212> PRT

<213> Macaca fascicularis

<400> 174

Met Ala Leu Leu Leu Thr Thr Val Ile Ala Leu Thr Cys Leu Gly Gly
1 5 10 15

Phe Ala Ser Pro Ser Pro Val Pro Pro Ser Thr Ala Leu Lys Glu Leu
20 25 30

Ile Glu Glu Leu Val Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys
35 40 45

Asn Gly Ser Met Val Trp Ser Ile Asn Leu Thr Ala Gly Val Tyr Cys
50 55 60

Ala Ala Leu Glu Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile Glu
65 70 75 80

Lys Thr Gln Arg Met Leu Asn Gly Phe Cys Pro His Lys Val Ser Ala
85 90 95

Gly Gln Phe Ser Ser Leu Arg Val Arg Asp Thr Lys Ile Glu Val Ala
100 105 110

Gln Phe Val Lys Asp Leu Leu Val His Leu Lys Lys Leu Phe Arg Glu
115 120 125

Gly Gln Phe Asn
130

<210> 175

<211> 131

<212> PRT

<213> Mus sp.

<400> 175

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Met Ala Leu Trp Val Thr Ala Val Leu Ala Leu Ala Cys Leu Gly Gly
1               5                   10                  15

Leu Ala Ala Pro Gly Pro Val Pro Arg Ser Val Ser Leu Pro Leu Thr
            20                  25                  30

Leu Lys Glu Leu Ile Glu Glu Leu Ser Asn Ile Thr Gln Asp Gln Thr
        35                  40                  45

Pro Leu Cys Asn Gly Ser Met Val Trp Ser Val Asp Leu Ala Ala Gly
    50                  55                  60

Gly Phe Cys Val Ala Leu Asp Ser Leu Thr Asn Ile Ser Asn Cys Asn
65                  70                  75                  80

Ala Ile Tyr Arg Thr Gln Arg Ile Leu His Gly Leu Cys Asn Arg Lys
                85                  90                  95

Ala Pro Thr Thr Val Ser Ser Leu Pro Asp Thr Lys Ile Glu Val Ala
            100                 105                 110

His Phe Ile Thr Lys Leu Leu Ser Tyr Thr Lys Gln Leu Phe Arg His
        115                 120                 125

Gly Pro Phe
    130
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<210> 176

<211> 5

<212> PRT

<213> Artificial sequence

<220>

<223> HCDR1 formula

<220>

<221> MISC_FEATURE

<222> (1)..(1)

<223> Xaa = Asn, Gln, Asp, Leu, Gly or Glu

<220>

<221> MISC_FEATURE

<222> (2)..(2)

<223> Xaa = Tyr or Thr

<220>

<221> MISC_FEATURE

<222> (4)..(4)

<223> Xaa = Val, Ile, Phe or Leu

<400> 176

Xaa Xaa Gly Xaa Ser
1 5

<210> 177

<211> 17

<212> PRT

<213> Artificial sequence

<220>

<223> HCDR2 formula

<220>

<221> MISC_FEATURE

<222> (3)..(3)

<223> Xaa = Ser, Asp, Asn, Ala, Arg, Gly or Glu

<220>

<221> MISC_FEATURE

<222> (4)..(4)

<223> Xaa = Ala, Asp, Gly, Thr, Pro, Asn or Tyr

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> Xaa = Asn, Asp, Leu, Ala, Pro, Thr, Ser, Ile or Arg

<220>
<221> MISC_FEATURE
<222> (6)..(6)
<223> Xaa = Asn, Ser, Thr, Asp, Gly, Lys or Ile

<220>
<221> MISC_FEATURE
<222> (8)..(8)
<223> Xaa = Asp, Thr, Glu, Gln, Leu, Tyr, Asn, Val, Ala, Met or Gly

<220>
<221> MISC_FEATURE
<222> (10)..(10)
<223> Xaa = Asn, Ile, Leu, Gln, Ser, Met, His, Asp or Lys

<220>
<221> MISC_FEATURE
<222> (12)..(12)
<223> Xaa = Gly or Arg

<220>
<221> MISC_FEATURE
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<223> Xaa = Gln or Arg

<220>

<221> MISC_FEATURE

<222> (14)..(14)

<223> Xaa = Glu, Lys or Gly

<220>

<221> MISC_FEATURE

<222> (16)..(16)

<223> Xaa = Gln or Arg

<220>

<221> MISC_FEATURE

<222> (17)..(17)

<223> Xaa = Gly or Lys

<400> 177

Trp Ile Xaa Xaa Xaa Xaa Gly Xaa Thr Xaa Tyr Xaa Xaa Xaa Phe Xaa
1 5 10 15

Xaa

<210> 178

<211> 13

<212> PRT

<213> Artificial sequence

<220>

<223> HCDR3 formula

<220>

<221> MISC_FEATURE

<222> (2)..(2)

<223> Xaa = Ser, Arg or Asp

<220>

<221> MISC_FEATURE

<222> (3)..(3)

<223> Xaa = Ser, Asn, Asp, Thr or Pro

<220>

<221> MISC_FEATURE

<222> (4)..(4)

<223> Xaa = Ser or Arg

<220>

<221> MISC_FEATURE

<222> (5)..(5)

<223> Xaa = Ser, Asn, Ala, Ile, Arg, Pro or Lys

<220>

<221> MISC_FEATURE

<222> (10)..(10)

<223> Xaa = Phe or Tyr

<220>

<221> MISC_FEATURE

<222> (12)..(12)

<223> Xaa = Asp or Tyr

<400> 178

Asp Xaa Xaa Xaa Xaa Trp Ala Arg Trp Xaa Phe Xaa Leu
1 5 10

<210> 179

<211> 11

<212> PRT

<213> Artificial sequence

<220>

<223> LCDR1 formula

<220>

<221> MISC_FEATURE

<222> (3)..(3)

<223> Xaa = Asn, Asp or Ser

<220>

<221> MISC_FEATURE

<222> (4)..(4)

<223> Xaa = Asn, Ile, Leu, Met, Cys, Val, Lys, Tyr, Phe, Arg, Thr, Ser, Ala, His or Gly

<220>

<221> MISC_FEATURE

<222> (5)..(5)

<223> Xaa = Ile or Val

<220>

<221> MISC_FEATURE

<222> (7)..(7)

<223> Xaa = Ser or Gly

<220>

<221> MISC_FEATURE

<222> (8)..(8)

<223> Xaa = Lys or Arg

<400> 179

Gly Gly Xaa Xaa Xaa Gly Xaa Xaa Leu Val His
1 5 10

<210> 180

<211> 7

<212> PRT

<213> Artificial sequence

<220>

<223> LCDR2 formula

<220>

<221> MISC_FEATURE

<222> (7)..(7)

<223> Xaa = Ser or Thr

<400> 180

Asp Asp Gly Asp Arg Pro Xaa
1 5

<210> 181

<211> 11

<212> PRT

<213> Artificial sequence

<220>

<223> LCDR3 formula

<220>

<221> MISC_FEATURE

<222> (8)..(8)

<223> Xaa = Asp or Asn

<220>

<221> MISC_FEATURE

<222> (11)..(11)

<223> Xaa = Val or Ile

<400> 181

Gln Val Trp Asp Thr Gly Ser Xaa Pro Val Xaa
1 5 10

<210> 182

<211> 5

<212> PRT

<213> Homo sapiens

<400> 182

Leu Thr Gly Val Ser
1 5

<210> 183

<211> 5

<212> PRT

<213> Homo sapiens

<400> 183

Gly Thr Gly Val Ser
1 5

<210> 184

<211> 5

<212> PRT

<213> Homo sapiens

<400> 184

Glu Thr Gly Ile Ser
1 5

<210> 185

<211> 5

<212> PRT

<213> Homo sapiens

<400> 185

Asp Thr Gly Ile Ser
1 5

<210> 186

<211> 5

<212> PRT

<213> Homo sapiens

<400> 186

Gly Thr Gly Ile Ser
1 5

<210> 187

<211> 5

<212> PRT

<213> Homo sapiens

<400> 187

Asn Tyr Gly Phe Ser
1 5

<210> 188

<211> 17

<212> PRT

<213> Homo sapiens

<400> 188

Trp Ile Arg Pro Thr Asp Gly Leu Thr Met Tyr Gly Gln Glu Phe Gln
1 5 10 15

Gly

<210> 189

<211> 17

<212> PRT

<213> Homo sapiens

<400> 189

Trp Ile Asp Asp Arg Thr Gly Thr Thr Gln Tyr Gly Gln Glu Phe Gln
1 5 10 15

Gly

<210> 190

<211> 17

<212> PRT

<213> Homo sapiens

<400> 190

Trp Ile Arg Ala Ser Asp Gly Gln Thr Ile Tyr Gly Gln Glu Phe Gln
1 5 10 15

Gly

<210> 191

<211> 17

<212> PRT

<213> Homo sapiens

<400> 191

Trp Ile Ser Gly Ile Asp Gly Val Thr Leu Tyr Gly Gln Glu Phe Gln
1 5 10 15

Gly

<210> 192

<211> 17

<212> PRT

<213> Homo sapiens

<400> 192

Trp Ile Arg Ala Ala Asp Gly Glu Thr His Tyr Gly Gln Glu Phe Gln
1 5 10 15

Gly

<210> 193

<211> 17

<212> PRT

<213> Homo sapiens

<400> 193

Trp Ile Gly Asn Asn Asn Gly Asp Thr Leu Tyr Gly Gln Glu Phe Gln
1 5 10 15

Gly

<210> 194

<211> 17

<212> PRT

<213> Homo sapiens

<400> 194

Trp Ile Gly Pro Ser Lys Gly Glu Thr Ser Tyr Gly Gln Glu Phe Gln
1 5 10 15

Gly

<210> 195

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<213> Homo sapiens

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<211> 132

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<223> Consensus between human IL-3 and Cynomolgus IL-3

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<222> (21, 30, 62, 87, 103, 120, 130)

<223> Xaa = Any amino acid

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Phe Ala Ser Pro Xaa Pro Val Pro Pro Ser Thr Ala Leu Xaa Glu Leu
20 25 30

Ile Glu Glu Leu Val Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys
35 40 45

Asn Gly Ser Met Val Trp Ser Ile Asn Leu Thr Ala Gly Xaa Tyr Cys
50 55 60

Ala Ala Leu Glu Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile Glu
65 70 75 80

Lys Thr Gln Arg Met Leu Xaa Gly Phe Cys Pro His Lys Val Ser Ala
85 90 95

Gly Gln Phe Ser Ser Leu Xaa Val Arg Asp Thr Lys Ile Glu Val Ala
100 105 110

Gln Phe Val Lys Asp Leu Leu Xaa His Leu Lys Lys Leu Phe Arg Glu
115 120 125

Gly Xaa Phe Asn
130

<210> 249

<211> 136

<212> PRT

<213> Artificial sequence

<220>

<223> Consensus between human IL-3 and murine IL-3

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<223> Xaa = Any amino acid

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<222> (49, 60, 61, 63, 66, 67, 69, 72, 75, 77, 79, 81, 84)

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<223> Xaa = Any amino acid

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<223> Xaa = Any amino acid

<400> 249

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Xaa Ala Xaa Pro Gly Pro Val Pro Xaa Ser Xaa Xaa Xaa Xaa Xaa Xaa
            20                  25                  30

Leu Xaa Glu Leu Ile Glu Glu Leu Xaa Asn Ile Thr Gln Xaa Gln Xaa
        35                  40                  45

Xaa Pro Leu Cys Asn Gly Ser Met Val Trp Ser Xaa Xaa Leu Xaa Ala
    50                  55                  60

Gly Xaa Xaa Cys Xaa Ala Leu Xaa Ser Leu Xaa Asn Xaa Ser Xaa Cys
65                  70                  75                  80

Xaa Ala Ile Xaa Xaa Thr Gln Arg Xaa Leu Xaa Gly Xaa Cys Xaa Xaa
                85                  90                  95

Lys Xaa Xaa Xaa Xaa Xaa Xaa Ser Ser Leu Xaa Xaa Xaa Asp Thr Lys
            100                 105                 110

Ile Glu Val Ala Xaa Phe Xaa Xaa Xaa Leu Leu Xaa Xaa Xaa Lys Xaa
        115                 120                 125

Leu Phe Arg Xaa Gly Xaa Phe Xaa
    130                 135
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